



1007

REMOVABLY POSITIONING A TERMINAL EDGE OF A FIRST CONDUIT PORTION IN AN OPPPOSING RELATIONSHIP WITH A TERMINAL EDGE OF A SECOND CONDUIT PORTION

1207

FACING THE TERMINAL EDGE OF THE FIRST CONDUIT PORTION AND THE TERMINAL EDGE OF THE SECOND CONDUIT PORTION

1307

ALIGNING THE TERMINAL EDGE OF THE FIRST CONDUIT PORTION WITH THE TERMINAL EDGE OF THE SECOND CONDUIT PORTION

1407

MELTING AT LEAST A PORTION OF THE TERMINAL EDGE OF THE FIRST CONDUIT PORTION AND THE TERMINAL EDGE OF THE SECOND CONDUIT PORTION

1507

ENGAGING THE MELTED TERMINAL EDGE OF THE FIRST CONDUIT PORTION WITH THE MELTED TERMINAL EDGE OF THE SECOND CONDUIT PORTION

1607

MAINTAINING PRESSURE BETWEEN THE ENGAGED TERMINAL EDGE OF THE FIRST CONDUIT PORTION AND THE TERMINAL EDGE OF THE SECOND CONDUIT PORTION, THEREBY CREATING A FUSED JOINT AREA

1707

REMOVING AT LEAST A PORTION OF THE RESULTANT EXTERNAL BEAD EXTENDING AROUND THE FUSED JOINT AREA

Fig. 1

2/6

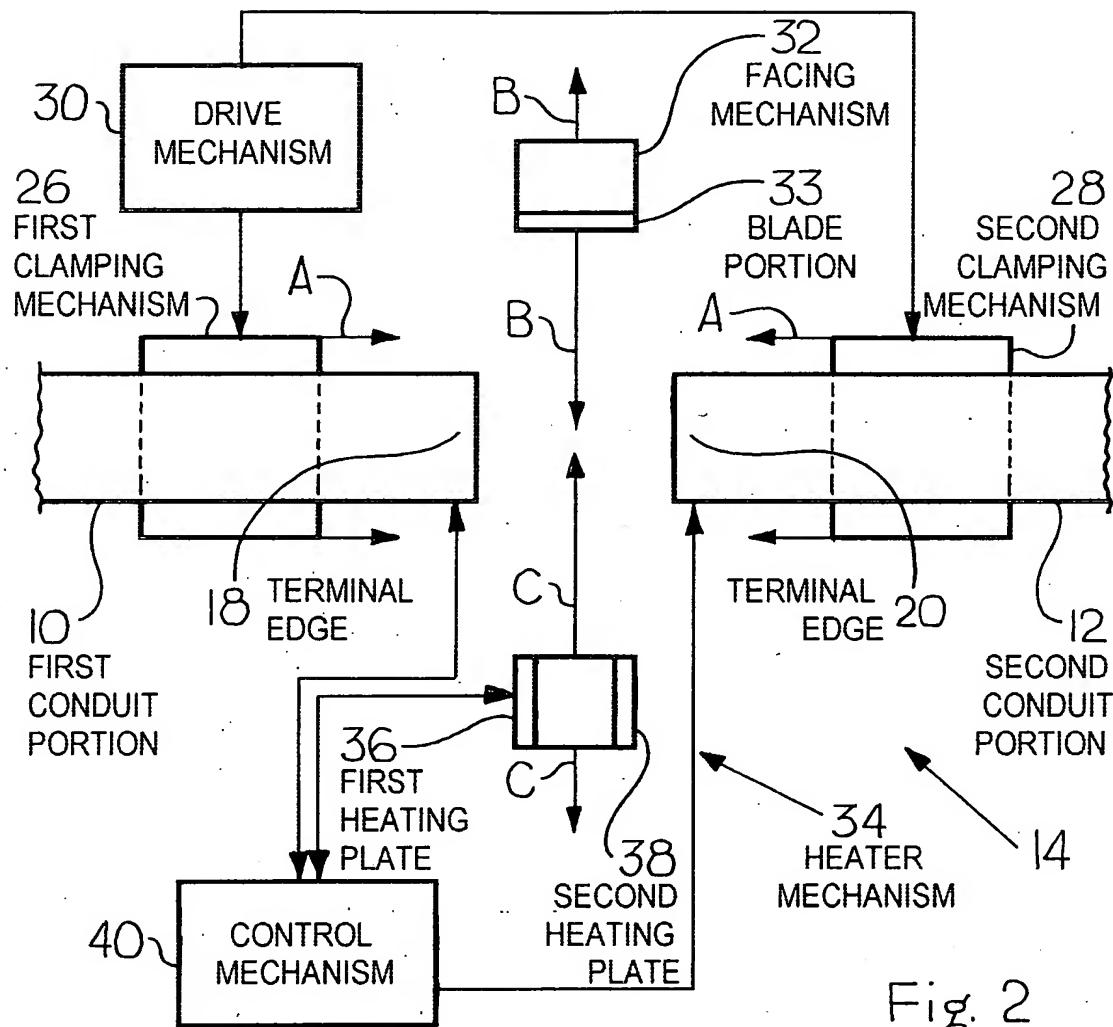


Fig. 2

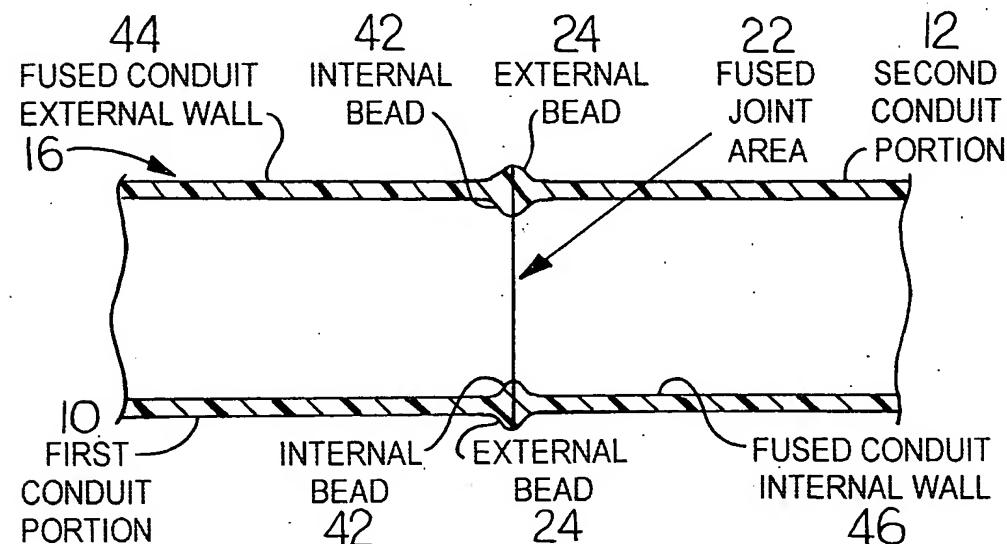


Fig. 3



"Fusion Process for Conduit"
 Bryan ST. ONGE et al.
 Application No. 10/788,921
 Attorney Docket No. 4326-032044

3/6

PVC BUTT FUSION CHART: PVC AWWA PIPE

C.I.O.D. SIZES C900 AND C905 STANDARDS
 CELL CLASS 12454B ASTM D 1784

PIPE DIAMETER (NOMINAL)	OUTSIDE DIAMETER (INCHES)	INSIDE DIAMETER (INCHES)	SURFACE AREA (SQ. INS.)	GAUGE* PRESSURE (PSI)	DR DIAMETER RATIO
4	4.80	4.42	2.75	385	25
4	4.80	4.27	3.78	529	18
4	4.80	4.11	4.83	715	14
6	6.90	6.35	5.73	802	25
6	6.90	6.13	7.88	1103	18
6	6.90	5.91	9.96	1395	14
8	9.05	8.33	9.04	1266	25
8	9.05	8.05	12.64	1771	18
8	9.05	7.76	16.24	2275	14
10	11.10	10.21	14.89	2085	25
10	11.10	9.87	20.25	2835	18
10	11.10	9.51	25.73	3602	14
12	13.20	12.15	20.91	2927	25
12	13.20	11.73	28.78	4030	18
12	13.20	11.31	36.38	5093	14
14	15.30	14.10	27.71	3880	25
16	17.40	16.00	36.73	5142	25
18	19.50	17.90	47.00	6580	25
20	21.60	19.90	55.41	7758	25
24	25.80	23.70	81.64	11430	25
30	32.00	29.40	148.94	20850	25
36	38.30	35.20	178.96	25055	25

INTERFACIAL PRESSURE: 140 PSI

PLATE: 415°F (213°C)

* CYLINDER AREA (Cn) BASED ON 1.00

Fig. 4



"Fusion Process for Conduit"
 Bryan ST. ONGE et al.
 Application No. 10/788,921
 Attorney Docket No. 4326-032044

4/6

PVC BUTT FUSION CHART: PVC SERIES PIPE

SDR 41

CELL CLASS 12454 B ASTM D 1784

PIPE DIAMETER (NOMINAL)	OUTSIDE DIAMETER (INCHES)	INSIDE DIAMETER (INCHES)	SURFACE AREA (SQ. INS.)	GAUGE* PRESSURE (PSI)
4	4.50	4.278	1.53	215
6	6.63	6.282	3.48	487
8	8.62	8.180	5.87	823
10	10.75	10.194	9.14	1280
12	12.75	12.093	12.82	1795
14	14.00	13.277	15.49	2169
16	16.00	15.174	20.22	2832
18	18.00	17.071	25.51	3572
20	20.00	18.985	31.08	4350
24	24.00	22.756	45.69	6400

INTERFACIAL PRESSURE: 140 PSI. PLATE: 415°F (213°C)

* CYLINDER AREA (Cn) BASED ON 1.00

Fig. 5

PVC BUTT FUSION CHART: PVC SERIES PIPE

SDR 32.5

CELL CLASS 12454 B ASTM D 1784

PIPE DIAMETER (NOMINAL)	OUTSIDE DIAMETER (INCHES)	INSIDE DIAMETER (INCHES)	SURFACE AREA (SQ. INS.)	GAUGE* PRESSURE (PSI)
3	3.50	3.271	1.22	170
4	4.50	4.208	2.00	279
6	6.63	6.194	4.57	640
8	8.62	8.063	7.37	1032
10	10.75	10.049	11.45	1604
12	12.00	11.921	16.06	2250
14	14.00	13.090	19.36	2710
16	16.00	14.957	23.36	3550
18	18.00	16.823	32.20	4508
20	20.00	18.698	39.58	5540
24	24.00	22.431	57.22	8010

INTERFACIAL PRESSURE: 140 PSI. PLATE: 415°F (213°C)

* CYLINDER AREA (Cn) BASED ON 1.00

Fig. 6



"Fusion Process for Conduit"
 Bryan ST. ONGE et al.
 Application No. 10/788,921
 Attorney Docket No. 4326-032044

5/6

PVC BUTT FUSION CHART: PVC SERIES PIPE

SDR 26

CELL CLASS 12454 B ASTM D 1784

PIPE DIAMETER (NOMINAL)	OUTSIDE DIAMETER (INCHES)	INSIDE DIAMETER (INCHES)	SURFACE AREA (SQ. INS.)	GAUGE* PRESSURE (PSI)
3	3.50	3.215	1.50	210
4	4.50	4.134	2.48	348
6	6.63	6.085	5.39	755
8	8.62	7.921	9.15	1282
10	10.75	9.874	14.18	1987
12	12.75	11.717	19.85	2780
14	14.00	12.857	24.11	3375
16	16.00	14.698	31.39	4395
18	18.00	16.531	39.84	5580
20	20.00	18.364	49.29	6900
24	24.00	22.039	70.90	9927

INTERFACIAL PRESSURE: 140 PSI. PLATE: 415°F (213°C)

* CYLINDER AREA (Cn) BASED ON 1.00

Fig. 7

PVC BUTT FUSION CHART: PVC SERIES PIPE

SDR 21

CELL CLASS 12454 B ASTM D 1784

PIPE DIAMETER (NOMINAL)	OUTSIDE DIAMETER (INCHES)	INSIDE DIAMETER (INCHES)	SURFACE AREA (SQ. INS.)	GAUGE* PRESSURE (PSI)
3	3.50	3.146	1.85	258
4	4.50	4.046	3.05	427
6	6.62	5.957	6.60	924
8	8.63	7.756	11.18	1566
10	10.75	9.665	17.35	2430
12	12.75	11.467	24.40	3416
14	14.00	12.589	29.47	4125
16	16.00	14.381	38.63	5409
18	18.00	16.180	48.86	6840
20	20.00	17.980	60.26	8436
24	24.00	21.580	86.63	12128

INTERFACIAL PRESSURE: 140 PSI. PLATE: 415°F (213°C)

* CYLINDER AREA (Cn) BASED ON 1.00

Fig. 8



"Fusion Process for Conduit"
Bryan ST. ONGE et al.
Application No. 10/788,921
Attorney Docket No. 4326-032044

6/6

PVC BUTT FUSION CHART: PVC SERIES PIPE

SCH 80 INDUSTRIAL IPS

CELL CLASS 12454 B ASTM D 1784

PIPE DIAMETER (NOMINAL)	OUTSIDE DIAMETER (INCHES)	INSIDE DIAMETER (INCHES)	SURFACE AREA (SQ. INS.)	GAUGE* PRESSURE (PSI)	DR DIAMETER (RATIO)
3	3.50	2.864	3.18	445	12
4	4.50	3.786	4.65	651	13
6	6.63	5.709	8.57	1243	16
8	8.62	7.565	13.48	1888	17
10	10.75	9.493	19.98	2798	18
12	12.75	11.294	27.50	3850	19
14	14.00	12.412	32.94	4612	19
16	16.00	14.224	42.16	5902	19
18	18.00	16.014	53.05	7428	19
20	20.00	17.814	64.92	9088	20
24	24.00	21.418	92.10	12895	20

INTERFACIAL PRESSURE: 140 PSI.

PLATE: 415 F (213 C)

* CYLINDER AREA (C_n) BASED ON 1.00

Fig. 9